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THE EFFECTIVENESS OF POAC IMPLEMENTATION IN CUCUMBER PRODUCTION MANAGEMENT FOR FARMERS AT THE MANDIRI SEJAHTERA FARMERS COOPERATIVE, SUKARAJA DISTRICT, SUKABUMI REGENCY

EFEKTIVITAS PENERAPAN POAC DALAM PENGELOLAAN PRODUKSI MENTIMUN PADA PETANI DI KOPERASI TANI MANDIRI SEJAHTERA KECAMATAN SUKARAJA KABUPATEN SUKABUMI

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Abstract

This study aims to analyze the effectiveness of implementing POAC (Planning, Organizing, Actuating, Controlling) management functions in managing cucumber (*Cucumis sativus* L.) production by farmers in the Mandiri Sejahtera Farmers Group, Sukaraja District, Sukabumi Regency. A descriptive qualitative research method was used, with purposive sampling, to select five farmer respondents. Data were collected through in-depth interviews, observations, and questionnaires, and then analyzed qualitatively using the POAC framework. The results indicate that farmers have inherently applied POAC principles adaptively and pragmatically, albeit with varying degrees of formality. Planning is adjusted to agro-climatic conditions and varietal preferences, resource organization is efficient, implementation follows standard cultivation procedures, and control is responsive to field conditions. The effectiveness of POAC implementation has been proven to support cucumber productivity in highland areas where rainfall is a dominant factor. The main constraints are dependence on rainwater and informal recording, but there is potential for improvement through a more structured recording system and diversification of water sources. This study adds to the understanding of POAC management adaptation at the small-scale farmer level.

Keywords: *POAC, Management Effectiveness, Cucumber Production, Farmers, Sukabumi*

Abstrak

Penelitian ini bertujuan menganalisis efektivitas penerapan fungsi manajemen POAC (Planning, Organizing, Actuating, Controlling) dalam pengelolaan produksi mentimun (*Cucumis sativus* L.) oleh petani di Koperasi Tani Mandiri Sejahtera, Kecamatan Sukaraja, Kabupaten Sukabumi. Metode penelitian deskriptif kualitatif digunakan dengan teknik *purposive sampling* untuk memilih lima responden petani. Data dikumpulkan melalui wawancara mendalam, observasi, dan kuesioner, kemudian dianalisis secara kualitatif berdasarkan kerangka POAC. Hasil penelitian menunjukkan bahwa petani secara inheren telah menerapkan prinsip-prinsip POAC secara adaptif dan pragmatis, meskipun dengan tingkat formalitas yang bervariasi. Perencanaan disesuaikan dengan kondisi agroklimat dan preferensi varietas, pengorganisasian sumber daya dilakukan efisien, pelaksanaan mengikuti prosedur standar budidaya, dan pengendalian bersifat responsif terhadap kondisi lapangan. Efektivitas penerapan POAC terbukti mampu mendukung produktivitas mentimun di wilayah dataran tinggi dengan curah hujan sebagai faktor dominan. Kendala utama adalah ketergantungan pada air hujan dan informalitas pencatatan, namun terdapat potensi

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peningkatan melalui sistem pencatatan yang lebih terstruktur dan diversifikasi sumber air. Penelitian ini menambah pemahaman tentang adaptasi manajemen POAC di tingkat petani skala kecil.

Kata Kunci: POAC, Efektivitas Manajemen, Produksi Mentimun, Petani, Sukabumi

INTRODUCTION

Cucumber (*Cucumis sativus* L.) is an important horticultural commodity in Indonesia with high economic value and stable market demand. The success of cucumber cultivation depends heavily on effective and efficient production management, given challenges such as climate fluctuations, pest and disease outbreaks, and resource availability (Begawati, 2019; Purba *et al*., 2022; Susilo, 2024). Farmers, especially in production centers like Sukabumi, need to implement systematic management practices to optimize yields. Production management in agriculture is often analyzed using the POAC framework: Planning, Organizing, Actuating, and Controlling (Prawitasari *et al*., 2022). This framework provides comprehensive guidance for managing every stage of the production process, from land preparation to post-harvest. However, the implementation of POAC at the farmer level, especially for small and medium-scale farmers with specific regional characteristics and conditions, may differ from the ideal concept in formal literature.

The Mandiri Sejahtera Farmers Cooperative in Sukaraja District, Sukabumi Regency, is one of the cucumber production centers in the highlands. Farmers in this location face unique challenges related to the local geography and dependence on natural factors, particularly rainfall. Therefore, this study aims to analyze the effectiveness of applying POAC management functions in cucumber production management by farmers at the Mandiri Sejahtera Farmers Cooperative in Sukaraja District, Sukabumi Regency. This understanding is expected to provide insights into effective management practices at the farmer level and identify areas for improvement to support the sustainability of farming businesses.

RESEARCH METHODS

This study uses a descriptive, qualitative approach to gain an in-depth understanding of farmers' management practices for cucumber production. The research location is the Mandiri Sejahtera Farmer Group in Sukaraja District, Sukabumi Regency, which was chosen because it is a cucumber production center and has high-altitude characteristics. The research will be conducted in May 2025.

The selection of respondents was conducted using purposive sampling, which involves selecting samples based on specific criteria relevant to the research objectives. The respondent criteria include: (1) cucumber farmers actively involved in the Mandiri Sejahtera Independent Farmers Group, (2) directly involved in the cucumber production management process, and (3) with a minimum of one full growing season of experience. Based on these criteria, five farmer respondents were selected to be research subjects.

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Primary data were collected through in-depth interviews, structured and unstructured questionnaires, and direct observation in the field to observe the cultivation practices in place. Secondary data were obtained from literature reviews on POAC management, cucumber cultivation, and the research area profile.

Data analysis was conducted qualitatively, with data from interviews and observations interpreted and organized using the POAC framework (Planning, Organizing, Actuating, Controlling). Each management function at each stage of cucumber production is outlined and then compared with the ideal POAC concept from the literature and findings from relevant prior research. This comparison aims to assess the effectiveness of farmers' POAC implementation and identify strengths, constraints, and development potential.

RESULTS AND DISCUSSION

This study involved five farmer respondents from the Mandiri Sejahtera Farmers Group, who were selected purposively. Respondents showed diversity in demographic characteristics and the size of their managed land. The respondents' ages ranged from 29 to 61 years, and their educational backgrounds ranged from elementary school to a Bachelor's degree in Agriculture. The area of managed cucumber cultivation ranges from 3,000 m² to 5,000 m², totaling 2.1 hectares. This diversity reflects the spectrum of experiences and approaches in agricultural practice.

Koperasi Tani Mandiri Sejahtera is located in the highlands of Sukabumi Regency. This geographical condition presents unique challenges and characteristics, particularly regarding water availability, which is highly dependent on rainfall, and climate conditions that affect crop growth and pest and disease outbreaks. This context is important for understanding the adaptation and effectiveness of POAC management practices among farmers (Tintin, 2019). Effectiveness of Applying the POAC Management Functions in Cucumber Production. An analysis of the effectiveness of applying the POAC functions was conducted at four key stages of cucumber production: land preparation, seed planting, maintenance, and harvesting. \

A. Land Preparation Stage

a. Planning

Farmers demonstrate effective planning in selecting varieties (mostly Semi F1, some Bandana or Hybrids), with clear consideration of yield and disease resistance. The planting schedule is highly adaptable to ideal weather conditions in the Sukabumi highlands (the beginning of the rainy season or the beginning/end of the dry season). The soil preparation methods (land preparation, raised beds, compost fertilizer, lime/dolomite) are consistent with standard agronomic practices. The effectiveness of this planning is very high because it integrates farmers' empirical knowledge with local agroclimatic conditions, in line with the principle of adaptive planning outlined by Hamidah *et al*. (2015). This shows that, regardless of their educational background (from elementary school to a bachelor's degree in Agriculture), farmers have an essential understanding of the importance of early planning.

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b. Organizing

The organization of land locations considers aspects such as soil fertility, accessibility, sunlight, and drainage, demonstrating a careful allocation of land resources. The simultaneous preparation of tools (hoes, cultivators) and the assignment of tasks to workers, either collectively or individually, demonstrates efficiency in managing human and physical resources. This organizational practice is effective and pragmatic, adapting to the scale of each farmer's business, thus supporting smooth field operations (Ramli, 2022). This finding adds to the understanding that efficiency can be achieved through adaptive organization, not always requiring strict formal structures in small-scale farming operations.

c. Implementation (Actuating)

The processes of plowing, loosening the soil, creating beds according to standard sizes, and installing stakes and support ropes are carried out in a structured manner. This disciplined execution demonstrates the effectiveness of applying the technical cultivation plan, which is crucial to the foundation of healthy plant growth.

d. Controlling

Soil condition and moisture are monitored routinely and visually. Although watering is highly dependent on rainwater, evaluating and improving the watering schedule/system when plants show signs of problems (e.g., wilting, yellowing) demonstrates responsive control. This control is effective in adapting to environmental conditions that cannot be fully controlled. However, complete reliance on rainwater, as is common in these highlands, also indicates a limited degree of control compared to more planned irrigation systems (Tiyandara *et al*., 2019).

B. Seed Planting Stage

a. Planning

Selecting seeds based on local adaptation experience (Semi F1, hybrids) demonstrates effective and pragmatic planning. Uniform planting distances of 30 cm and a planting schedule adjusted to the weather are adaptive planning to avoid risks. This planning is highly effective in mitigating the initial risks to crop growth, aligning with ideal planning theory that emphasizes adaptation.

b. Organizing

The decision to sow seeds directly, without transplanting, reflects an organization focused on the efficiency of time and effort. Procuring seeds from official stores and adjusting the number of workers also demonstrates targeted resource organization. Although effective in terms of operational efficiency, this approach differs slightly from practices that might be more ideal for initial seedling selection. However, this demonstrates efficient adaptation in the field.

c. Implementation (Actuating)

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The manual seed planting process, by hand, at a depth of 2-3 cm, with standard planting distances and 2 seeds per hole, demonstrates consistent implementation. This consistency supports effectiveness in achieving population uniformity and early plant growth.

d. Controlling

Monitoring the early growth of seedlings and the practice of thinning (replacing seedlings) after 4-5 days post-planting are very important forms of quality control. This practice is highly effective and aligns with the principle of ideal control (Augustine, 2023), which calls for early detection of problems and immediate corrective actions to maintain optimal plant populations.

C. Stages of Care

a. Planning

The fertilization plan (every 10 days or in 3 stages) and the combined pest and disease control strategy (rotation, botanical pesticides, and chemical pesticides if necessary) demonstrate a comprehensive plan. This approach is effective in addressing nutritional and plant-protection needs, but, as mentioned earlier, dependence on rainwater remains a managerial challenge in water resource planning.

b. Organizing

The preparation of fertilizers (manure, NPK, grower) and pesticides (organic, chemical) indicates adequate input organization. The varied division of care tasks—whether by type of work or collectively—demonstrates flexibility in labor organization. This organization effectively supports the smooth implementation of field maintenance, adapting to the scale of each farmer's business.

c. Implementation (Actuating)

The implementation of watering, which depends on rainwater, emphasizes adaptation to natural resources. Fertilizing in 3 stages with an NPK dosage of approximately 100–150 kg per 5,000 m² per season, along with manual weeding every week, indicates scheduled and consistent implementation. This consistency is highly effective for plant health and growth and strongly supports the findings of Ramli (2022) and Lestari *et al*. (2023), who emphasized the importance of regular fertilization and care to optimize cucumber production.

d. Controlling

Monitoring treatment results by observing growth, leaf color, the number of flowers, and fruit development is a clear indicator of control. Visually evaluating the effectiveness of fertilizers and pesticides and adjusting dosage or replacing them if ineffective within 7-10 days demonstrates responsive control practices. This approach is highly effective and aligns with the principles of ideal control (Augustine, 2023), in which performance is monitored directly. Corrective actions are taken based on feedback from plant conditions. In the context of pest

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control in cucumber cultivation, the observed practices (crop rotation, botanical use, and chemical application when necessary) align with and support the concept of Integrated Pest Management (IPM), as discussed by Suparman *et al*. (2023).

D. Harvesting Stage

a. Planning

Determining whether cucumbers are ready for harvest based on size and estimated harvest time, every two days, indicates systematic harvest planning focused on product quality. This planning is highly effective for managing harvest yields to meet market standards, suggesting that farmers have clear goals regarding the quality of their output (Augustine, 2023; Sari *et al*., 2025).

b. Organizing

Harvesting is organized in stages based on fruit size. Task distribution to workers during harvest is done with clear instructions on how to carefully pick the fruit, separate ripe fruit, and ensure the fruit is not damaged. This practice is effective in minimizing losses and maintaining post-harvest quality, aligning with the principle of efficient task allocation in an organization (Rohman, 2024).

c. Implementation (Actuating)

The cucumber harvesting process is done manually, picked by hand. However, there is variation in the implementation of daily harvest quantity recording. Some respondents record details in books/Excel (e.g., Iqbal Habibi), while others rely only on scales or container estimates. The technical execution of harvesting is effective, but the informality of recording by most respondents indicates an area where practices are less supportive of the ideal actuating function, which requires accurate documentation for decision-making (Augustine, 2023). This adds to the understanding of the challenges of systematic implementation at the smallholder level.

d. Controlling

The quality of the harvested cucumbers is monitored by checking their size, color, texture, and the absence of defects, followed by sorting directly in the field. Direct supervision, clear instructions, and careful bed weeding by respondents to ensure no fruits were missed or damaged indicate strict control practices. This quality control is highly effective and strongly supports post-harvest efficiency, which aligns with the principle of quality-oriented control and standard compliance (Augustine, 2023).

Challenges and Potential in Implementing POAC In the practice of cucumber production management at the Mandiri Sejahtera Farmers Group, the main challenge is the high dependence on rainwater for irrigation, which makes the group vulnerable to weather anomalies and limits farmers' control over water resources. Additionally, the variation in the level of formality in recording harvest and input data by some respondents poses a challenge for accurate evaluation and more strategic planning. Nevertheless, this study also identifies significant potential for improvement, including optimizing the data recording system more systematically, exploring

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simple irrigation technologies as a backup water source, and enhancing collaboration within the group through knowledge sharing and adoption of more advanced farming practices. Utilizing this potential can further strengthen the efficiency and productivity of cucumber cultivation in the future.

CONCLUSION AND RECOMMENDATIONS

This research confirms that the management of cucumber production at the Mandiri Sejahtera Farmers Group, located in the Sukabumi highlands, is effectively implemented by adapting the POAC management functions (Planning, Organizing, Actuating, Controlling). Farmers demonstrate a high ability to plan cultivation based on local agroclimatic conditions and empirical experience, and to pragmatically and efficiently organize resources according to the scale of their operations. The technical implementation of cultivation is consistent with common agronomic procedures. Despite limitations in water source control (reliance on rainwater) and variations in record-keeping formality, the control function remains responsive through direct observation and rapid corrective action. Overall, this adaptive, experience-based POAC management is key to the effectiveness of cucumber production amid the specific environmental challenges of the highlands.

To further improve the effectiveness of cucumber production management in the Mandiri Sejahtera Farmers Group, it is recommended that farmers strengthen their data recording system for production, input use, and operational costs in a more formal, structured manner, providing an accurate basis for planning and evaluation. Additionally, exploring and adopting water conservation technologies or simple irrigation methods should be considered to reduce reliance on rainwater and increase resilience to climate fluctuations. Finally, increased collaboration among group members through discussion forums and knowledge-sharing initiatives is expected to accelerate the adoption of innovation and sustainably strengthen collective managerial capacity.

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